

The spider's web

Virtual museums – not so far away

As more science and natural history museums move away from the tired 'stuffed animals and fossils' format towards interactive exhibits, some are also offering dynamic cyber visits. Now, there's no need to leave your desk to examine fossils in three dimensions or check out Galileo's body parts.

The first stop on an online museum tour should be the San Francisco Exploratorium, where there's an extensive exhibit on memory that takes such diverse approaches as dissecting a sheep brain and examining the importance of hair in face recognition (If You're Going to Rob a Bank, Wear a Wig). Some exhibits are unique to the web site, whereas others are digital versions of the Exploratorium's real-life exhibits, like the beginner's guide to *Drosophila* mutants. And if you ever wondered what's at the root of a 'bad hair' day, this is the place to find out. It's worth taking a look at the site's monthly top-ten listing of other cool science sites.

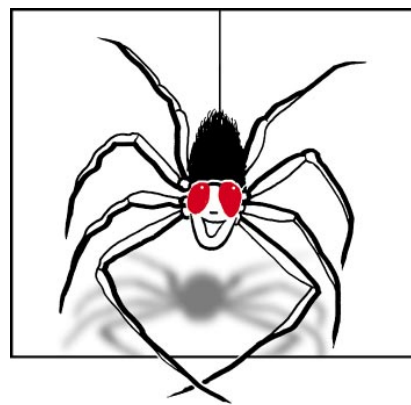
If you thought paleontology was just a load of old fossils, check out the online exhibits at The University of California Museum of Paleontology site. The Introduction to Phylogeny, for example, teaches you how to build a cladogram from the shared derived characteristics of organisms. There's also an extensive discussion on the convergent evolution of vertebrate flight, which evolved three

times in the 500 million years of vertebrate history.

For those who struggle either to explain or to understand the genetic code, there's a great introduction at The Tech Museum of Innovation's web site. DNA: The Instructional Manual for All Life zooms in on the chromosomes in a skin cell and even shows how to read a sequencing gel. After descriptions of genome mapping and scientists' hopes for curing genetic diseases, there is a reality check as the site presents hypothetical ethical dilemmas arising from genetic knowledge.

The AnthroNews section of the The American Museum of Natural History web site includes exhibits (such as three-dimensional views of human skulls), debates (for example, over the origins of the modern human) and features (such as on human ageing). The exhibits are mainly brief summaries of the museum's real-life exhibitions but budding conservationists might enjoy the Meeps Island flying frog in the Endangered Species exhibit.

The most successful online museums are those that make use of the dynamic potential of the internet to offer exhibits that work just as well online as in real life. At The Institute and Museum of History of Science in Florence, you can take a virtual tour of the museum's Galileo room, including a look at the middle finger of his right hand. Less dynamic, but nonetheless fascinating, is Mechanical Marvels: Invention in the Age of Leonardo, the real-life exhibition of which started in Florence but is currently touring. The tantalising sections on Leonardo's research into bird flight and human anatomy reveal how



these studies influenced both his drawings and his mechanical models.

The most lively online museum experience discovered by *The spider* is at London's Natural History Museum. Provided you've got the right virtual reality software (available free on the internet), you'll be able to enter the Virtual *Endeavour* exhibit, an experiment in the new medium of virtual exhibitions that ran at the Museum itself last year. The three-dimensional reconstruction of Captain Cook's *Endeavour* contains plant and animal specimens as well as drawings and sketches created during the voyage. The scientists on board described more than 1,500 species of plants and animals never before seen by Europeans.

The virtual *Endeavour* experiment aimed to test visitors' responses to virtual reality museum galleries. Is this the way for museums in the future? Certainly, it's a great way of enlivening online exhibits (elsewhere on the Natural History Museum site, you can examine some virtual fossils). But even if you aren't equipped with virtual reality software, the site contains some other gems, in the form of the Cosmic Football and the Beast of Bodmin Moor.

Museum visits need no longer be restricted to high days and holidays, and they don't have to stop when your feet start aching. No need to 'do' the Exploratorium in a day; now you can duck in for more whenever you like.

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This month's URLs

Exploratorium
University of California Museum of Paleontology
The Tech Museum of Innovation
American Museum of Natural History
The Institute and Museum of History of Science of Florence
The Natural History Museum, London

<http://www.exploratorium.edu/>
<http://www.ucmp.berkeley.edu/>
<http://www.thetech.org/>
<http://www.amnh.org/>
<http://www.imss.firenze.it>
<http://www.nhm.ac.uk/>